

Members in attendance: Dave Kaplan (City of Cambridge); Nigel Pickering (CRWA); Glenn Haas (DEP); Jeff Davis (UMASS); Brian Wick (CCCGA); Cary Parsons (Woodward and Curran); Kerry Mackin (IRWA); Vicki Zoltay (Abt Assoc.); Peter Weiskel (USGS); Piotr Parasiewicz (Rushing Rivers Institute); John Kastrinos (Haley & Aldrich); Tom Camberari (Cape Cod Commission); Eric Hooper (Town of Sharon) Ralph Abele (EPA); Kathy Baskin (EEA); Jack Buckley (DFG); Glenn Haas (DEP); Anne Carroll (DCR).

Meeting Objectives:

- **Discuss results of Streamflow Workgroup meetings regarding fish metrics and solicit feedback from the subcommittee**
- **Begin discussions on Streamflow Criteria and relationship to categorization**
- **Update on Safe Yield**

Action Items resulting from today's meeting:

- **The Technical Subcommittee recommends to the Advisory Committee that the categorization methodology be accepted.**
- **An ad hoc Supply Model Workgroup will be established to discuss the development of a complementary water supply model, and asks that staff assist with research and support.**

1. Welcome and Introductions

Jeff Davis welcomed everyone and reviewed some ground rules to help maintain decorum for today's discussions:

Recognize that the calendar moves along, and pressure we may feel increasing pressure

It is summertime, and vacation schedules may be affecting planning and communications

These factors may sometimes contribute to poor behavior

Remember to be clear

It is not enough to object to an idea – present an alternative

“I don't like this.....because_____, but here is an alternative”

Following Jeff's remarks, Jack Buckley convened the formal meeting.

Introductions were waived in the interest of time. Jack said his overall goal was to bring to a conclusion our discussions on stream categorization.

2. Minority Report of the Streamflow Workgroup

Charlie Cooper

Mr. Cooper works as a consultant, often for the water suppliers. His presentation today is offered as a private citizen. See presentation ***“A Case for Supplemental Metrics”***

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Mr. Cooper offered what he described as metrics that could supplement the statewide screening tool for habitat categorization developed by DFW. . The categorization grows out of the work performed by DFW in conjunction with USGS, based on the riverine study recently published (See: <http://pubs.usgs.gov/of/2010/1139/>).

Mr. Cooper expressed concern that, in the categorization process, a narrow universe of fish species are used to make determinations. When looking at this universe, warm-water fish native to eastern/coastal MA comprise less than 20% of that universe. The universe of fish used in the analysis is comprised mostly of species found in central and western areas of the state, however it was used to represent fish in the eastern part of the state.

Further, the abundance of the two warm-water species which are present in the eastern part of the state was reported by the USGS/DFW study to be unrelated to August stream-flow depletion. In his opinion, this makes the use of the proposed state-wide fluvial abundance metric inapplicable to warm-water eastern/coastal streams.

Coldwater fisheries were also identified by Mr. Cooper as a sub-group of interest for which a separate metric might be appropriate.

His conclusion: the categorization should be supplemented with both a metric that would give more information about fisheries in the eastern part of the state and a cold water fisheries metric. These supplemental metrics would be a low flow analysis of specific fall fish species.

Discussion:

One member of the streamflow workgroup, which met on July 12 to review these issues, felt that other elements of the report noted that this issue was accounted for in the methodology.

Question: Why were fallfish recommended for analysis of year-class abundance after low-flow periods?

Answer: Data for four species were analyzed preliminarily by Mr. Cooper-fallfish, common shiner, white sucker and creek chubsucker. In this analysis, fallfish showed reduced year-class abundance after a low-flow year.

Question: Why were the fluvial species abundant in the central/western part of the state missing in the eastern part of the state?

Answer: Geographic isolation occurred at the end of the last period of glaciations when streams south and east of the Merrimack and Blackstone drainages were separated by uplift from those including and north and west of those drainages.

Question: would the adoption of the additional metric make the analysis more or less sensitive?

Answer: it would make the analysis more accurate for the eastern streams and more sensitive for all streams.

The issue of model validation was raised. Far less expectation of abundance of fluvial fish was anticipated by the model for western regional fish in the eastern regions. This issue was discussed further by Todd Richards in his presentation. (See below)

As time was limited and this proposal did not directly affect the adoption of a statewide screening tool, the discussion moved to the next agenda item.

3. Report of the Streamflow Workgroup

Todd Richards, DFG

*See presentation: **Stream Categorization: Describing the Current Condition***

Categorization is:

- Statewide Screening Tool
- Describe the Current Condition
- Using Best Available Science
- Living Document
- Useful Tool for Discussion of:
 - Goal Setting
 - Streamflow Criteria
 - Safe Yield

Categories are narrow at the low end of alteration - high quality resources have sensitive populations that respond extensively to alteration.

Categories are broad at the high end of alteration – communities of more tolerant species remain, providing less change per unit of alteration.

Using the model, If you hold impervious cover fixed one can chart the increments of change based on August Percent Alteration.

Categories are described in terms of biological change.

Category 1	0 to 5% Alteration of Fluvial Relative Abundance
Category 2	5 to 15% Alteration of Fluvial Relative Abundance
Category 3	15 to 35% Alteration of Fluvial Relative Abundance
Category 4	35 to 65% Alteration of Fluvial Relative Abundance
Category 5	Greater than to 65% Alteration of Fluvial Relative Abundance

Discussion: Jack Buckley (Chair) asked for discussion, with an objective of sending this categorization methodology up to the Advisory committee for approval

Most of the discussion centered on understanding the detailed elements of Category 5, as at times we have considered further subdividing Category 5 into A, B, C, D subcategories.

The application of the methodology and use of the data has matured over time.

There are limitations, limitations that can be responded to through site specific study

Question: Has the analysis on all 1400 subwatersheds been completed?

Answer: No, but enough has been done that a general profile of our subwatersheds can be offered. 1200 of 1440 basins have been done. In APPROXIMATE terms, results indicate the subwatersheds break down in the following manner: Category 1: 7%, Category 2: 10%, Category 3: 16%, Category 4: 19%, Category 5: 48%

Question: Should there be an element that includes the suitability of a subwatershed for use as a water supply?

Answer: The development of a water supply model to help evaluate subwatersheds and their ability to serve water supply needs would also help inform us. Determination of how this information could be developed, and whether it could help refine the categorization process or be included in policies related to goals should be developed.

Recommendation: This would be better suited as part of the goals/policy element the Advisory Committee would undertake. Members were asked to identify what traits would identify such suitability. Anne Carroll (DCR) agreed to meet with Jen Pederson (MWWA) and Cary Parsons to discuss this element in detail. This consideration became a parking lot issue.

There was a request that the Technical Subcommittee come to a consensus opinion regarding the categorization methodology. The Chair recommended adopting the habitat categorization methodology as presented, with five general categories (1 through 5).

Categorization is defined as a statewide screening tool which describes the current condition of the subwatersheds using best available science. It is a living document and a useful tool for many discussions including goal setting, streamflow criteria, and safe yield.

Question: Is this methodology something you can live with, something you can support?

Consensus: Yes.

Parking Lot Issue regarding water supply: An ad hoc workgroup will be established to discuss the development of a complementary water supply model, and asks that staff assist with research and support. Anne Carroll, Glenn Haas, Cary Parsons, and Jen Pederson will initiate that effort. Others will be notified of meetings via Other Workgroups section on the project website at www.mass.gov/eca/swm.

BREAK

4. Discussion of Streamflow Criteria

This is intended as a brainstorming session on streamflow criteria. The end objective is to provide an overall framework for allocating water.

What needs to be included in streamflow criteria? For example:

- percent fluvial abundance (pfa) = x (impervious cover) + Y (august median alteration)
- potential economic development
- Shifts from one category to the next (up or down), including the concept of no backsliding?
- Protection of an aquifer?

Identifying criteria should not result in accepting the existing conditions as entrenched. There must be pathways for improvement in the subwatersheds.

How do we distinguish between goals and criteria?

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Biological criteria are highlighted by the categorization process. Additional criteria, related more to flow, can be raised here.

In general terms, items which should be considered in developing streamflow criteria are:

- Drought component
- Seasonality
- Spatial scale
- Ecological Integrity
- Recognition of surface water supplies, consideration of benefit of releases.
- Minimizing water supply requirements on peak demand
- Helpful in discovering at what point OTHER sources of water, including even sources in other basins
- Elements of continuity/connectivity (enhancing the fluvial biologic metric in ways other than alterations

It may also be needed to identify objectives for the categories of rivers, and then derive criteria from there.

Example, a river may be important for coldwater fisheries and for water supply. This identifies objectives of use. If there an objective for uses of the river, then the criteria can be established. In the case of what may appear competing criteria, thresholds can be determined for each and implemented through the permit and engineering processes.

6. Update on Safe Yield

Anne Carroll

In May members of the staff and the Technical Subcommittee met with Nigel Pickering (CRWA). Nigel offered an alternate view on the calculation of safe yield. The proposed method had a well-defined environmental component that was linked to the Fish & Flow study (30% fish decline at 25% Aug Median depletion). Because the safe yield numbers quite low in magnitude, credit could be allowed for return flow and storage. (See http://www.env.state.ma.us//eca/swm-resources/2010-0519-tech-subcomm-mtg/2010_may_19_tech_pickering_safeyield.pdf) Key elements of those discussions included the notion that storage and wastewater returns, could be considered, as well as the consideration of seasonal figures.

Nigel observed that, should the May safe yield numbers be used, which are high in magnitude, then he would want ***all*** these proposed credits to be taken off the table.

7. Adjournment - Upcoming meetings:

<u>Advisory Committee</u>	<u>Technical Subcommittee</u>
September 1, 2010. 10:00 Am to 12:30 PM 100 Cambridge Street, Boston MA	September 14, 2010. 10:00AM to 1:00 PM 100 Cambridge Street, Boston MA We will continue the discussion on streamflow criteria

For the most up to date information on meeting schedules, refer to the project website at www.mass.gov/eca/swm.